SIEMENS

Data sheet 3RM1102-1AA14



Fail-safe direct starter, 3RM1, 500 V, 0.09 - 0.75 kW, 0.4 - 2 A, 110-230 V AC, screw terminals

product brand name	SIRIUS
product category	Motor starter
product designation	Fail-safe direct starter
design of the product	With electronic overload protection and safety-related disconnection
product type designation	3RM1
General technical data	
equipment variant according to IEC 60947-4-2	3
product function	fail-safe direct starter
• intrinsic device protection	Yes
 for power supply reverse polarity protection 	Yes
suitability for operation device connector 3ZY12	No
insulation voltage rated value	500 V
overvoltage category	III
surge voltage resistance rated value	6 kV
maximum permissible voltage for protective separation	
 between main and auxiliary circuit 	500 V
between control and auxiliary circuit	250 V
shock resistance	6g / 11 ms
vibration resistance	1 6 Hz, 15 mm; 20 m/s², 500 Hz
operating frequency maximum	1 1/s
mechanical service life (operating cycles) typical	15 000 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	03/01/2017
product function	
direct start	Yes
reverse starting	No
product function short circuit protection	No
Electromagnetic compatibility	
EMC emitted interference according to IEC 60947-1	class A
EMC immunity according to IEC 60947-1	Class A
conducted interference	
 due to burst according to IEC 61000-4-4 	3 kV / 5 kHz
 due to conductor-earth surge according to IEC 61000-4-5 	4 kV signal lines 2 kV
 due to conductor-conductor surge according to IEC 61000-4-5 	2 kV
 due to high-frequency radiation according to IEC 61000- 4-6 	10 V
field-based interference according to IEC 61000-4-3	10 V/m
electrostatic discharge according to IEC 61000-4-2	6 kV contact discharge / 8 kV air discharge
conducted HF interference emissions according to CISPR11	Class B for domestic, business and commercial environments; Class A for industrial environments at 110 V DC

field-bound HF interference emission according to CISPR11	Class B for domestic, business and commercial environments; Class A for industrial environments at 110 V DC
Safety related data	maddinar difficilition at 110 V DO
safety device type according to IEC 61508-2	Type B
B10d value	1 300 000
Safety Integrity Level (SIL) according to IEC 61508	3
SIL Claim Limit (subsystem) according to EN 62061	SILCL 3
performance level (PL) according to EN ISO 13849-1	e
category according to EN ISO 13849-1	4
stop category according to EN 60204-1	0
Safe failure fraction (SFF)	99 %
average diagnostic coverage level (DCavg)	99 %
diagnostics test interval by internal test function maximum	600 s
function test interval maximum	1 a
failure rate [FIT]	
 at rate of recognizable hazardous failures (λdd) 	1 400 FIT
at rate of non-recognizable hazardous failures (λdu)	16 FIT
PFHD with high demand rate according to EN 62061	2E-8 1/h
PFDavg with low demand rate according to IEC 61508	0
MTTFd	75 a
hardware fault tolerance according to IEC 61508	1
safe state	Load circuit open
protection class IP on the front according to IEC 60529	IP20
touch protection on the front according to IEC 60529	finger-safe
hardware fault tolerance according to IEC 61508 relating to ATEX	0
PFDavg with low demand rate according to IEC 61508 relating to ATEX	0.0005
PFHD with high demand rate according to EN 62061 relating to ATEX	5E-8 1/h
Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX	SIL2
T1 value for proof test interval or service life according to IEC 61508 relating to ATEX	3 a
Main circuit	2
Main circuit number of poles for main current circuit	3 Hybrid
Main circuit	3 Hybrid 0.4 2 A
Main circuit number of poles for main current circuit design of the switching contact adjustable current response value current of the current-	Hybrid
Main circuit number of poles for main current circuit design of the switching contact adjustable current response value current of the current- dependent overload release	Hybrid 0.4 2 A
Main circuit number of poles for main current circuit design of the switching contact adjustable current response value current of the current- dependent overload release minimum load [%]	Hybrid 0.4 2 A 20 %; from set rated current
Main circuit number of poles for main current circuit design of the switching contact adjustable current response value current of the current- dependent overload release minimum load [%] type of the motor protection	Hybrid 0.4 2 A 20 %; from set rated current solid-state
Main circuit number of poles for main current circuit design of the switching contact adjustable current response value current of the current- dependent overload release minimum load [%] type of the motor protection operating voltage rated value	Hybrid 0.4 2 A 20 %; from set rated current solid-state 48 500 V
Main circuit number of poles for main current circuit design of the switching contact adjustable current response value current of the current- dependent overload release minimum load [%] type of the motor protection operating voltage rated value relative symmetrical tolerance of the operating voltage	Hybrid 0.4 2 A 20 %; from set rated current solid-state 48 500 V 10 %
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a 110 V	• with signal <0> at DC	0.25 mA
en 1230 Y 1 mont current at digital input for signal <1> at AC 1 mA 2 m 2	input current at digital input with signal <0> at AC	
Injust current at digital injust for signal <1> at AC	● at 110 V	0.2 mA
* all 110 V	● at 230 V	0.4 mA
# 120 V	input current at digital input for signal <1> at AC	
	● at 110 V	1.1 mA
Separational current of suxiliary contacts at DC-13 at 24 V maximum operational current of suxiliary contacts at DC-13 at 24 V maximum or max	• at 230 V	2.3 mA
maximum	·	1
Separational current of suxiliary contacts at DC-13 at 24 V mixamum Paratical Circuit/ Control Paratical Circuit/ Circu		3 A
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inrush current peak • at AC at 110 V • at AC at 230 V • at AC at 110 V at switching on of motor • at AC at 230 V at switching on of motor • at AC at 230 V at switching on of motor • at AC at 230 V at switching on of motor • at AC at 230 V at switching on of motor 2 900 mA duration of inrush current peak • at AC at 110 V 1 ms	 in standby mode of operation 	4 mA
 at AC at 110 V at AC at 230 V at AC at 110 V at switching on of motor at AC at 110 V at switching on of motor at AC at 230 V at switching on of motor at AC at 230 V at switching on of motor 2 900 mA duration of inrush current peak at AC at 110 V 1 ms 	during operation	30 mA
 at AC at 230 V at AC at 110 V at switching on of motor at AC at 230 V at switching on of motor at AC at 230 V at switching on of motor 2 900 mA duration of inrush current peak at AC at 110 V 1 ms 	inrush current peak	
 at AC at 110 V at switching on of motor at AC at 230 V at switching on of motor duration of inrush current peak at AC at 110 V 1 ms 	• at AC at 110 V	1 200 mA
• at AC at 230 V at switching on of motor 2 900 mA duration of inrush current peak • at AC at 110 V 1 ms	• at AC at 230 V	2 900 mA
duration of inrush current peak • at AC at 110 V 1 ms	• at AC at 110 V at switching on of motor	1 200 mA
• at AC at 110 V 1 ms	-	2 900 mA
	-	
• at AC at 230 V		
	• at AC at 230 V	1 ms

at AC at 110 V at switching on of motor	1 ms
at AC at 230 V at switching on of motor	1 ms
power loss [W] in auxiliary and control circuit	
in switching state OFF	
— with bypass circuit	1.4 W
in switching state ON	
— with bypass circuit	3.22 W
Response times	
ON-delay time	90 120 ms
OFF-delay time	60 90 ms
Power Electronics	
operational current	
 at 40 °C rated value 	2 A
 at 50 °C rated value 	2 A
 at 55 °C rated value 	2 A
 at 60 °C rated value 	2 A
Installation/ mounting/ dimensions	
mounting position	vertical, horizontal, standing (observe derating)
fastening method	screw and snap-on mounting onto 35 mm DIN rail
height	100 mm
width	23 mm
depth	142 mm
required spacing	
with side-by-side mounting	
— forwards	0 mm
— backwards	0 mm
— upwards	50 mm
— downwards	50 mm
— at the side	0 mm
for grounded parts	
— forwards	0 mm
— backwards	0 mm
— upwards	50 mm
— at the side	4 mm
— downwards	50 mm
Ambient conditions	
installation altitude at height above sea level maximum	4 000 m; For derating see manual
ambient temperature	
during operation	-25 +60 °C
during storage	-40 +70 °C
during transport	-40 +70 °C
environmental category during operation according to IEC	3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2
60721	(sand must not get into the devices), 3M6
relative humidity during operation	10 95 %
air pressure according to SN 31205	900 1 060 hPa
Communication/ Protocol	
protocol is supported	
PROFINET IO protocol	No
PROFIsafe protocol	No
product function bus communication	No
protocol is supported AS-Interface protocol	No
Connections/ Terminals	
type of electrical connection	screw-type terminals for main circuit, screw-type terminals for control circuit
for main current circuit	screw-type terminals
for auxiliary and control circuit	screw-type terminals
wire length for motor unshielded maximum	100 m
type of connectable conductor cross-sections for main contacts	
solid	1x (0,5 4 mm²), 2x (0,5 2,5 mm²)
finely stranded with core end processing	1x (0,5 4 mm²), 2x (0,5 2,5 mm²) 1x (0,5 4 mm²), 2x (0,5 1,5 mm²)
connectable conductor cross-section for main contacts	1. (0,0 + 11111), 2. (0,0 1,0 11111)
solid or stranded	0.5 4 mm²
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 finely stranded with core end processing 	0.5 4 mm²
connectable conductor cross-section for auxiliary contacts	
 solid or stranded 	0.5 2.5 mm²
 finely stranded with core end processing 	0.5 2.5 mm²
type of connectable conductor cross-sections	
 for auxiliary contacts 	
— solid	1x (0,5 2,5 mm²), 2x (1,0 1,5 mm²)
 finely stranded with core end processing 	1x (0.5 2.5 mm²), 2x (0.5 1 mm²)
 for AWG cables for auxiliary contacts 	1x (20 14), 2x (18 16)
AWG number as coded connectable conductor cross section	
• for main contacts	20 12
 for auxiliary contacts 	20 14
UL/CSA ratings	
yielded mechanical performance [hp]	
 for single-phase AC motor 	
— at 230 V rated value	0.125 hp
• for 3-phase AC motor	
— at 200/208 V rated value	0.33 hp
— at 220/230 V rated value	0.33 hp
— at 460/480 V rated value	0.75 hp
operating voltage at AC rated value	480 V
operational current at AC at 480 V according to UL 508	2 A
Certificates/ approvals	

General Product Approval

EMC



Confirmation









For use in hazardous locations

Functional Safety/Safety of Machinery

Declaration of Conformity

Test Certificates

other



Type Examination Cer**tificate**





Type Test Certificates/Test Report

Confirmation

Railway

Special Test Certificate

Further information

Siemens has decided to exit the Russian market (see here).

https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

Information on the packaging

nens.com/cs/ww/en/view/109813875 https://support.industry.sier

Information- and Downloadcenter (Catalogs, Brochures,...)

https://www.siemens.com/ic10

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RM1102-1AA14

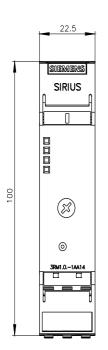
Cax online generator

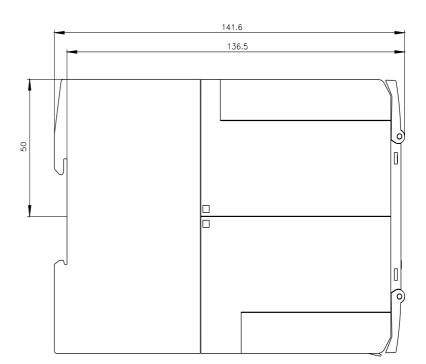
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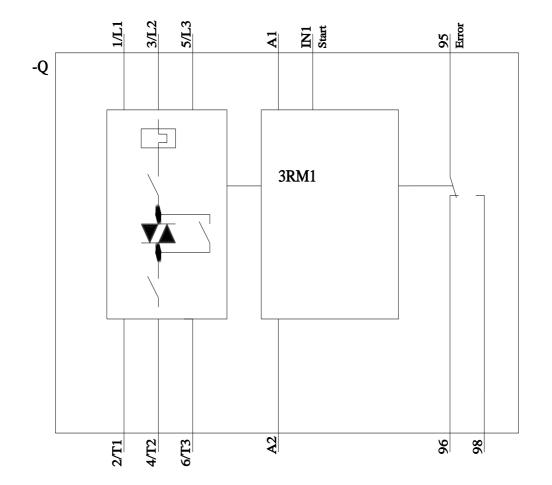
Service&Support (Manuals, Certificates, Characteristics, FAQs,...) https://support.industry.siemens.com/cs/ww/en/ps/3RM1102-1AA14

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

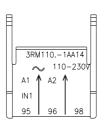
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RM1102-1AA14&lang=en

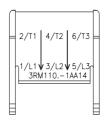












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